

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Canceled).

2. (Currently amended) A turning angle detector comprising:

a magnetic flux generating means including a magnet for generating magnetic fluxes;

a magnetism sensing element responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generating means and the magnetism sensing element from the magnetic fluxes passing therethrough; and

a magnetic flux reducing means for passing therethrough only a part of the magnetic fluxes generated by the magnet thereby to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generating means and the magnetism sensing element is within a predetermined range of turning angles, which predetermined range is less than a full range of relative turning angles,

wherein at least one of said magnetic flux reducing means and said magnetic flux generating means is rotatable relative to the other of said magnetic flux reducing means and said magnetic flux generating means, and

wherein the magnetic flux reducing means includes an external magnetic member made of magnetic material to pass the part of the magnetic fluxes therethrough, and

wherein the magnetic flux generating means includes a magnetic flux passage means, provided separately from the magnetic flux reducing means, for forming a magnetic path different from that of the magnetic flux reducing means.

3. (Original) The turning angle detector as in claim 2, wherein:
the magnetic flux generating means includes two generally semi-cylindrical yokes made of magnetic material and sandwiching the magnet between respective circumferential ends; and
the yokes have an inside shape of an ellipse.
4. (Original) The turning angle detector as in claim 2, wherein:
the magnet is divided into two generally semi-cylindrical magnet parts and magnetized in a radial direction; and
the magnetism sensing element is disposed between the magnet parts so that the magnetic fluxes pass from one of the magnet parts to the other of the magnet parts through the magnetism sensing element.
5. (Original) The turning angle detector as in claim 2, wherein the external magnetic member is provided radially outside the magnetic flux generating means.
6. (Original) The turning angle detector as in claim 2, wherein the external magnetic member is provided radially inside the magnetic flux generating means and axially displaced from the magnetism sensing element.

Claims 7-12. (Canceled).

13. (Previously presented) A turning angle detector comprising:
a magnetic flux generating means including a magnet for generating magnetic fluxes;
a magnetism sensing element responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generating

means and the magnetism sensing element from the magnetic fluxes passing therethrough; and

a magnetic flux reducing means for passing therethrough only a part of the magnetic fluxes generated by the magnet thereby to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generating means and the magnetism sensing element is within a predetermined range of turning angles, which predetermined range is less than a full range of relative turning angles,

wherein the magnetic flux reducing means includes an external magnetic member made of magnetic material to pass the part of the magnetic fluxes therethrough,

wherein the magnetic flux generating means includes two generally semi-cylindrical yokes made of magnetic material and sandwiching the magnet between respective circumferential ends; and

wherein the yokes have an inside shape of an ellipse.

Claims 14-18. (Canceled).

19. (Currently amended) A turning angle detector comprising:

a magnetic flux generator including a magnet for generating magnetic fluxes;

a magnetism sensing element responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generator and the magnetism sensing element from the magnetic fluxes passing therethrough; and

a magnetic flux reducer for passing therethrough only a part of the magnetic fluxes generated by the magnet thereby to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generator and the magnetism sensing element is within a predetermined

range of turning angles, which predetermined range is less than a full range of relative turning angles,

wherein at least one of said magnetic flux reducer and said magnetic flux generator is rotatable relative to the other of said magnetic flux reducer and said magnetic flux generator, and

wherein the magnetic flux reducer includes an external magnetic member made of magnetic material to pass the part of the magnetic fluxes therethrough, and

wherein the magnetic flux generating means includes a magnetic flux passage means, provided separately from the magnetic flux reducing means, for forming a magnetic path different from that of the magnetic flux reducing means.

20. (Previously presented) The turning angle detector as in claim 19, wherein the magnet is divided into two generally semi-cylindrical magnet parts and magnetized in a radial direction; and

the magnetism sensing element is disposed between the magnet parts so that the magnetic fluxes pass from one of the magnet parts to the other of the magnet parts through the magnetism sensing element.

Claims 21. (Canceled).

22. (Previously presented) The turning angle detector as in claim 13, wherein said yokes are provided separately from the magnetic flux reducing means and form a magnetic path different from that of the magnetic flux reducing means.

Claim 23. (Canceled).

24. (New) A turning angle detector comprising:
a magnetic flux generating means including a magnet for generating magnetic fluxes;

a magnetism sensing element responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generating means and the magnetism sensing element from the magnetic fluxes passing therethrough; and

a magnetic flux reducing means for passing therethrough only a part of the magnetic fluxes generated by the magnet thereby to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generating means and the magnetism sensing element is within a predetermined range of turning angles, which predetermined range is less than a full range of relative turning angles,

wherein at least one of said magnetic flux reducing means and said magnetic flux generating means is rotatable relative to the other of said magnetic flux reducing means and said magnetic flux generating means,

wherein the magnetic flux reducing means includes an external magnetic member made of magnetic material to pass the part of the magnetic fluxes therethrough, and

wherein:

the magnet is divided into two generally semi-cylindrical magnet parts and magnetized in a radial direction; and

the magnetism sensing element is disposed between the magnet parts so that the magnetic fluxes pass from one of the magnet parts to the other of the magnet parts through the magnetism sensing element.

25. (New) A turning angle detector comprising:

a magnetic flux generator including a magnet for generating magnetic fluxes;
a magnetism sensing element responsive to the magnetic fluxes passing therethrough to detect a relative turning angle between the magnetic flux generator and the magnetism sensing element from the magnetic fluxes passing therethrough;
and

a magnetic flux reducer for passing therethrough only a part of the magnetic fluxes generated by the magnet thereby to reduce the magnetic fluxes passing through the magnetism sensing element only when the relative turning angle between the magnetic flux generator and the magnetism sensing element is within a predetermined range of turning angles, which predetermined range is less than a full range of relative turning angles,

wherein at least one of said magnetic flux reducer and said magnetic flux generator is rotatable relative to the other of said magnetic flux reducer and said magnetic flux generator,

wherein the magnetic flux reducer includes an external magnetic member made of magnetic material to pass the part of the magnetic fluxes therethrough, and

wherein:

the magnet is divided into two generally semi-cylindrical magnet parts and magnetized in a radial direction; and

the magnetism sensing element is disposed between the magnet parts so that the magnetic fluxes pass from one of the magnet parts to the other of the magnet parts through the magnetism sensing element.